

In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A manual input device comprising:
a knob;
a feeling providing device which has at least two kinds of feeling patterns; and
an actuator which ~~activates~~ positions at least one of a ball and a pin with respect to the feeling providing device and changes an operation feeling given to the knob.
2. (Original) The manual input device according to Claim 1, wherein the knob is manipulated by linear movement.
3. (Original) The manual input device according to Claim 1, wherein the knob is manipulated by rotation.
4. (Original) The manual input device according to Claim 1, wherein the knob is manipulated by rotation in at least two directions.
5. (Currently amended) The manual input device according to Claim 1,
wherein the feeling providing device comprises one of a disc and a cylinder which bears plural feeling patterns (rows) and is fixed to a control shaft to be manipulated by the knob; and one of the a-ball and the pin is elastically forced to contact the one of the disc and the cylinder, and
wherein the actuator linearly reciprocates the one of the ball and the pin in a direction where the plural feeling patterns are arranged.
6. (Currently amended) The manual input device according to Claim 1,
wherein the feeling providing device comprises one of a disc and a cylinder which has a single feeling pattern (row) and is fixed to a control shaft to be manipulated by the knob; and one of the at least two plural-balls and pins is elastically forced to contact the one of the disc and the cylinder, and
wherein the actuator linearly reciprocates a selected one of the one of the at least two plural-balls and pins in a direction where the selected one of

the one of the at least two plural balls and pins selectively engages with the feeling pattern.

7. (Previously presented) The manual input device according to Claim 1, wherein the feeling providing device comprises a rotary polyhedron which bears plural feeling patterns (rows) arranged in parallel along an axial direction of an outer surface, and

wherein the actuator reciprocally rotates the rotary polyhedron around an axis of the rotary polyhedron, with one end of a control shaft to be manipulated by the knob being in contact with the outer surface of the rotary polyhedron bearing the feeling patterns.

8. (Currently amended) [[A]] The manual input device according to claim 1, comprising:

a knob;

~~feeling providing device which provides the knob with an operation feeling;~~

~~an actuator which activates the feeling providing device;~~

~~a detector which detects an operating condition of the knob; and~~

~~an input/output section which exchanges signals with an external device controlled by the knob,~~

wherein the actuator is controlled according to a control signal generated based on an external signal from an external detector connected at least with the external device.

9. (Original) The manual input device according to Claim 8, wherein the knob is manipulated by linear movement.

10. (Original) The manual input device according to Claim 8, wherein the knob is manipulated by rotation.

11. (Original) The manual input device according to Claim 8, wherein the knob is manipulated by rotation in at least two directions.

12. (Currently amended) The manual input device according to Claim 8, wherein the feeling providing device comprises one of a disc and a cylinder which bears plural feeling patterns (rows) and is fixed to a control shaft

to be manipulated by the knob; and one of a ball and a pin elastically forced to contact the one of the disc and the cylinder, and

wherein the actuator linearly reciprocates the one of the ball and pin in a direction where the plural feeling patterns are arranged.

13. (Currently amended) The manual input device according to Claim 8,

wherein the feeling providing device comprises one of a disc and a cylinder which bears a single feeling pattern (row) and is fixed to a control shaft to be manipulated by the knob; and one of ~~plural~~ at least two balls and pins is elastically forced to contact the one of the disc and cylinder, and

wherein the actuator linearly reciprocates a selected one of the one of the at least two ~~plural~~ balls and pins in a direction where the selected one of the one of the at least two ~~plural~~ balls and pins selectively engages with the feeling pattern.

14. (Previously presented) The manual input device according to Claim 8,

wherein the feeling providing device comprises a rotary polyhedron which bears plural feeling patterns (rows) arranged in parallel along an axial direction of an outer surface, and

wherein the actuator reciprocally rotates the rotary polyhedron around an axis of the rotary polyhedron, with one end of a control shaft to be manipulated by the knob being in contact with the outer surface of the rotary polyhedron bearing the feeling patterns.

15. (Currently amended) [[A]] The manual input device comprising:
according to claim 1, having

~~a knob;~~

~~a feeling providing device which provides the knob with an operation feeling;~~

~~an actuator which activates the feeling providing device;~~

~~a control section for the actuator;~~

~~a detector which detects an operating condition of the knob; and~~

an input/output section which exchanges signals with an external device controlled by the knob,

wherein an external signal from an external detector connected at least with the external device is inputted into the control section through the input/output section to generate a control signal for the actuator to match at least the external signal, and wherein the actuator is controlled according to the control signal.

16. (Currently amended) [[A]] The manual input device comprising:
according to claim 1, having

~~a knob;~~

~~a feeling providing device which provides the knob with an operation feeling;~~

~~an actuator which activates the feeling providing device;~~

a control section for the actuator;

a detector which detects an operating condition of the knob; and

an input/output section which exchanges signals with an external device controlled by the knob,

wherein both a detection signal at least from the detector and an external signal from an external detector connected with the external device are inputted into the external device to generate control information for the actuator to match the detection signal and the external signal, wherein the control information is picked up by the control section through the input/output section to generate a control signal for the actuator to match the control information, and wherein the actuator is controlled according to the control signal.

17. (Currently amended) [[A]] The manual input device comprising:
according to claim 1, having

~~a knob;~~

~~a feeling providing device which provides the knob with an operation feeling;~~

~~an actuator which activates the feeling providing device;~~

a detector which detects an operating condition of the knob; and

an input/output section which exchanges signals with an external device controlled by the knob,

wherein both a detection signal at least from the detector and an external signal from an external detector connected with the external device are inputted into the external device to generate a control signal for the actuator to match the detection signal and the external signal, and wherein the actuator is controlled according to the control signal.

18. (Currently amended) A car-mounted apparatus controller comprising:
a function selection switch for selecting one function among various functions to be controlled; and

a manual input device for controlling the function selected by the function selection switch, said manual input device further comprising a knob, a feeling providing device which has at least two kinds of feeling patterns, an actuator which positions at least one of a ball and a pin with respect to the feeling providing device and changes an operation feeling given to the knob.

al
amt
~~the manual input device comprising:~~

~~—— a knob;~~
~~—— feeling providing means having at least two kinds of feeling patterns; and~~
~~—— an actuator for activating the feeling providing means and changing an operation feeling given to the knob.~~

19. (Currently amended) A car-mounted apparatus controller comprising:

an electric apparatus selection switch for selecting an electric apparatus to be controlled;

a function selection switch for selecting one of various functions of the electric apparatus selected by the apparatus selection switch; and

~~—— a manual input device, said manual input device further comprising further comprising a knob, a feeling providing device which has at least two kinds of feeling patterns, an actuator which positions at least one of a ball and a pin with~~

respect to the feeling providing device and changes an operation feeling given to the knob,

wherein the actuator is controlled according to a control signal generated based on an external signal from an external detector connected at least with the external device.

~~for controlling a function selected by the function selection switch,~~

~~—— the manual input device comprising:~~

~~—— a knob;~~

~~—— feeling providing means for providing the knob with an operation feeling;~~

~~—— an actuator for activating the feeling providing means;~~

~~—— detecting means for detecting an operating condition of the knob; and~~

~~—— an input/output section which exchanges signals with an external device controlled by the knob,~~

~~—— wherein the actuator is controlled according to a control signal generated based on both a detection signal at least from the detecting means and an external signal from external detecting means connected with the external device.~~